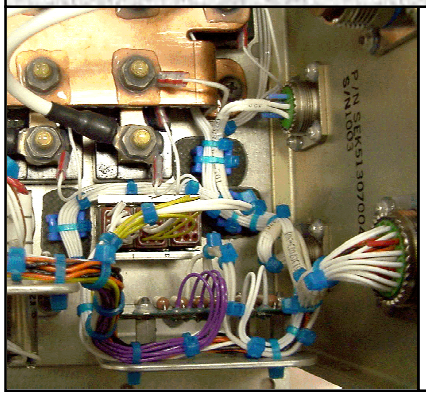
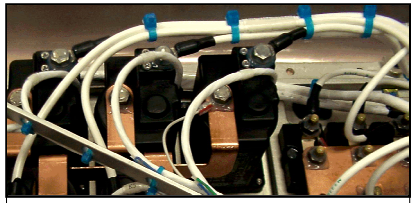
CABLE AND HARNESS
DISCRETE CONDUCTOR HARNESSES



DISCRETE CONDUCTOR HARNESSES

Discrete conductor harnesses are built to print for specific applications, and are constructed of one or more individually insulated wires, cables, or fiber optics; with or without an overall helical twist; with or without an overall covering, jacket, or metallic braid; with or without breakouts; assembled with two or more electrical termination devices; and engineered as a unit that can be assembled and handled as a single component.

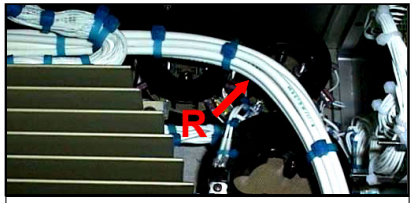
See Section 4.01 “Cable and Harness, General Requirements”, for common accept / reject criteria.



PREFERRED
GENERAL HARNESSES

Harness and connectors are clean, damage-free, and free of contamination and/or corrosion. Dimensions, layout, and identification meet design requirements.

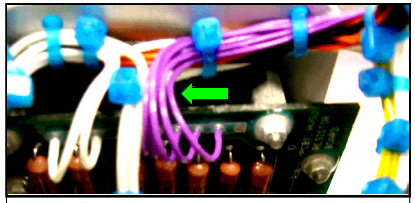
NASA-STD-8739.4 [19.6.1.e]



MANDATORY
BEND RADIUS

Cables and harnesses shall not be subjected to bending forces resulting in radii less than the minimum specified for the most sensitive component (i.e.: coaxial, fiber, etc.) in the assembly.

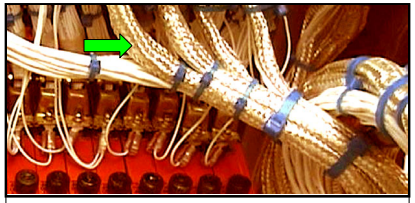
Best Workmanship Practice



ACCEPTABLE
CONDUCTOR DRESS

All wires are dressed with even bends and sufficient strain relief. Conductor crossover is minimized.

NASA-STD-8739.4 [19.6.1.e]

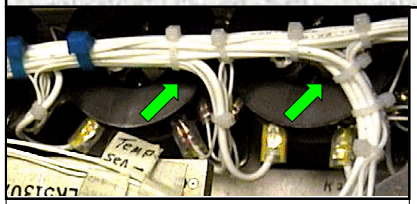


ACCEPTABLE
OVERALL SHIELDING

An overall braided metallic shield provides mechanical and electrical protection (EMI/RFI) to the harness. Metallic shielding shall exhibit a smooth and tight finish, with a uniform distribution of coverage and no projecting strands.

NASA-STD-8739.4 [11.1.3]

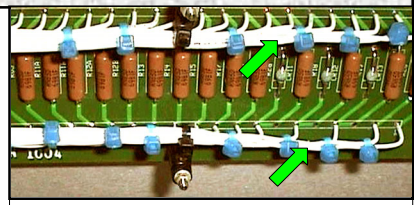
CABLE AND HARNESS
DISCRETE CONDUCTOR (cont.)



ACCEPTABLE
TIE / WRAP SPACING AT BREAKOUT

Lacing or tie wraps have been placed on both sides of the harness breakouts. Ties are neat and tight.

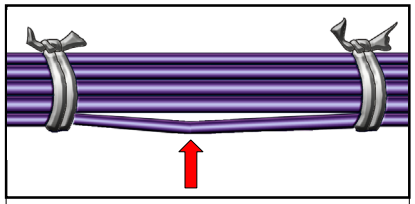
NASA-STD-8739.4 [9.6]



ACCEPTABLE
UNIFORM CONDUCTOR TENSION

The conductors exhibit uniform tension throughout the length of the harness. No bunching, bowing, looping, kinks, etc.

NASA-STD-8739.4 [19.6.1.e.3]



UNACCEPTABLE
INCORRECT TIE SPACING

Cable ties / wraps have not been properly spaced relative to bundle / harness diameter.

NASA-STD-8739.4 [19.6.2.d.7]